

TRANSACTIONS

OF THE

American Society of Civil Engineers.

INDEX.

VOLUME XLI.

JUNE, 1899.

NOTE.—In this Index, Subjects and Writers are given Alphabetically. Titles of Papers are enclosed by quotation marks when indexed alone or under the Author's name. When indexed under the name of a person discussing a paper, the titles are not thus enclosed. Titles are entered with reference to the subject and also under the first significant word.

INDEX.

VOLUME XLI.

JUNE, 1899.

- “ACCURACY AND DURABILITY OF WATER METERS.” John W. Hill, 326.
Discussion: John Thomson, 353; J. Waldo Smith, 359; Clemens Herschel, 379.
Correspondence: James H. Harlow, 382; W. C. Hawley, 384; E. Kuichling, 394; George W. Rafter, 397; L. J. Le Conte, 400; John W. Hill, 402.
- ADAMS, ARTHUR L. “Stave Pipe—Its Economic Design and the Economy of Its Use.” 27, 80.
- “ADDRESS AT THE ANNUAL CONVENTION, CAPE MAY, N. J., June 27th, 1899.” Desmond FitzGerald, President, 596.
- “APPROACHES AND TRANSPORTATION FACILITIES OF THE Paris Exposition of 1900.” E. L. Corthell, 298.
- ASSERSON, P. C. Dry Docks, 581.
- BARNES, DAVID LEONARD. Memoir of— 618.
- BERGER, BERNT. Experiments on Bridges under Moving Train Loads, 454.
- BISHOP, THOMAS SPARKS. Memoir of— 621.
- BOLLER, ALFRED P. Dry Docks, 592.
- BOWLES, FRANCIS T. Dry Docks, 591.
- BREITHAUP, WILLIAM H.
The Launhardt Formula and Railroad Bridge Specifications, 166.
- BRIDGES.
“The Launhardt Formula and Railroad Bridge Specifications.” Henry B. Seaman. (With Discussion.) 140.
—at the Paris Exposition of 1900. E. L. Corthell, 300.
“Some Experiments on— under Moving Train Loads.” F. E. Turneure. (With Discussion.) 410.
“The Determination of the Safe Working Stress for Railway Bridges of Wrought Iron and Steel.” E. Herbert Stone. (With Discussion.) 467.
- BUDD, HENRY I. Road Building, 96.

BURKE, M. D. Road Building, 130.

CAIN, WILLIAM. Safe Working Stress for Bridges, 529.

CATHCART, WILLIAM LEDYARD. Dry Docks, 554.

CEDAR RIVER, WASHINGTON. Gauging of— T. A. Noble, 1.

CISNEROS, FRANCISCO JAVIER. Memoir of— 622.

“COAL HOISTS OF THE CALUMET AND HECLA MINING Company.” Julius Kahn, 269.

Discussion: George Hill, 293; O. J. Marstrand, 295; T. A. Coffin, 295.

Correspondence: Julius Kahn, 297.

COFFIN, T. A. Coal-Hoisting Machinery, 295.

COLE, HOWARD J. Road Building, 115.

COLLINGWOOD, FRANCIS. Dry Docks, 590.

CONROW, H. Road Building, 133.

COOPER, THEODORE. The Launhardt Formula and Railroad Bridge Specifications, 215.

CORTHELL, E. L. “The Approaches and Transportation Facilities of the Paris Exposition of 1900,” 298.

CUDWORTH, F. G. Road Building, 126.

“DETERMINATION OF THE SAFE WORKING STRESS FOR Railway Bridges of Wrought Iron and Steel.” E. Herbert Stone, 467.

Correspondence: Henry S. Prichard, 503; R. H. Thurston, 509; J. A. L. Waddell, 517; J. L. Power O’Hanly, 521; F. E. Turneure, 527; William Cain, 529; J. M. Moncrieff, 534; Mansfield Merriman, 537; Joseph M. Wilson, 538; J. B. Johnson, 539; E. Herbert Stone, 540.

DOCKS.

“Dry Docks—Stone *vs.* Wood.” An Informal Discussion, 554.

“DRY DOCKS—STONE *vs.* WOOD.” An Informal Discussion. William Ledyard Cathcart, 554; George W. Melville, 565; M. T. Endicott, 570; R. G. Packard, 581; P. C. Asserson, 581; J. G. Tait, 586; John Kennedy, 587; James Ritchie, 590; Francis Collingwood, 590; Charles H. Haswell, 591; Francis T. Bowles, 591; Alfred P. Boller, 592; Edward Mohun, 594.

ELECTRIC RAILROADS.

At the Paris Exposition of 1900. E. L. Corthell, 315, 323.

ENDICOTT, M. T. Dry Docks, 570.

“EXPERIMENTS ON BRIDGES UNDER MOVING TRAIN Loads.” F. E. Turneure, 410.

Discussion: H. B. Seaman, 453; Bernt Berger, 454; T. Kennard Thomson, 455; G. H. Thomson, 456.

Correspondence: J. B. Johnson, 465; F. E. Turneure, 465.

EXPOSITION.

"The Approaches and Transportation Facilities of the Paris—
of 1900." E. L. Corthell, 298.

FINK, ALBERT. Memoir of— 626.

FITZGERALD, DESMOND. "Address at the Annual Convention,
Cape May, N. J., June 27th, 1899," 596.

FORMULA.

Kutter's— T. A. Noble, 2, 3, 25; Rudolph Hering, 16; L. J. Le
Conte, 18; Benetzette Williams, 22; Arthur L. Adams, 54, 55,
56; James D. Schuyler, 80.

"The Launhardt— and Railroad Bridge Specifications." Henry
B. Seaman. (With Discussion.) 140.

Launhardt's— "The Determination of the Safe Working
Stress for Railway Bridges of Wrought Iron and Steel." E.
Herbert Stone. (With Discussion.) 467.

FOSTER, W. C. Road Building, 135.

FOWLER, C. E. The Launhardt Formula and Railroad Bridge Spe-
cifications, 203.

"GAUGING OF CEDAR RIVER, WASHINGTON." Theron A.
Noble, 1.

Discussion: Rudolph Hering, 16.

Correspondence: L. J. Le Conte, 18; George W. Rafter, 19; Bene-
zette Williams, 21; Theron A. Noble, 23.

GILES, ROBERT. The Launhardt Formula and Railroad Bridge Spe-
cifications, 217.

GRAHAM, CHARLES H. Road Building, 115.

GREINER, J. E. The Launhardt Formula and Railroad Bridge
Specifications, 218.

HARLOW, JAMES H. Water Meters, 382.

HARRISON, E. W. Road Building, 107.

HASWELL, CHARLES H. Dry Docks, 591.

HAWLEY, W. C. Water Meters, 384.

HENNY, D. C. Wooden Stave Pipe, 68.

HERING, RUDOLPH.

Gauging Cedar River, Washington, 16.

Kutter's Formula, 16.

Flow of Water, 16.

Wooden Stave Pipe, 60.

HERSCHEL, CLEMENS. Water Meters, 379.

HILL, GEORGE.

Road Building, 117.

Coal-Hoisting Machinery, 293.

HILL, JOHN W. "The Accuracy and Durability of Water Meters," 326, 402.

HOLBROOK, F. W. D. Wooden Stave Pipe, 65.

HYDRAULICS.

"Gauging of Cedar River, Washington." Theron A. Noble. (With Discussion). 1.

"Stave Pipe—Its Economic Design and the Economy of Its Use." Arthur L. Adams. (With Discussion.) 27.

JOHNSON, J. B.

The Launhardt Formula and Railroad Bridge Specifications, 187.

Experiments on Bridges under Moving Train Loads, 465.

Safe Working Stress for Bridges, 539.

KAHN, JULIUS. "The Coal Hoists of the Calumet and Hecla Mining Company," 269, 297.

KENNEDY, JOHN. Dry Docks, 587.

KILLEBREW, SAMUEL. Memoir of — 639.

KUICHLING, E. Water Meters, 394.

"LAUNHARDT FORMULA AND RAILROAD BRIDGE SPECIFICATIONS." Henry B. Seaman, 140.

Discussion: William H. Breithaupt, 166; Mansfield Merriman, 170; C. C. Schneider, 172; George S. Morison, 181.

Correspondence: J. B. Johnson, 187; J. W. Schaub, 188; Charles H. Wright, 188; J. R. Worcester, 191; F. E. Turneure, 195; Mace Moulton, 199; Palmer C. Ricketts, 202; C. E. Fowler, 203; J. P. Snow, 206; J. A. L. Waddell, 210; Theodore Cooper, 215; Robert Giles, 217; J. E. Greiner, 218; Edgar Marburg, 221; Joseph M. Wilson, 228; Henry B. Seaman, 236.

LE CONTE, L. J.

Gauging Cedar River, Washington, 18.

Kutter's Formula, 18.

Wooden Stave Pipe, 66.

Riveted Wrought-Iron Pipe, 66.

Road Building, 134.

Water Meters, 400.

LEUTZÉ, T. McC. Road Building, 121.

LEWIS, N. P. Road Building, 99.

McCANN, T. H. Road Building, 128.

McCLINTOCK, W. E. Road Building, 89.

McLAUGHLIN, J. J. Road Building, 110.

MARBURG, EDGAR. The Launhardt Formula and Railroad Bridge Specifications, 221.

MARSTRAND, O. J. Coal Hoisting Machinery, 295.

MEEM, JAMES C. Wooden Stave Pipe, 63.

MELVILLE, GEORGE W. Dry Docks, 565.

MEMOIRS.

David Leonard Barnes, 618.

Thomas Sparks Bishop, 621.

Francisco Javier Cisneros, 622.

Albert Fink, 626.

Samuel Killebrew, 639.

Frederick Henry Smith, 643.

William Garnett Williamson, 645.

William Roberts Michie, 647.

Waterman Stone, 649.

MERRIMAN, MANSFIELD.

The Launhardt Formula and Railroad Bridge Specifications,
170.

Safe Working Stress for Bridges, 537.

METERS.

Current— "Gauging of Cedar River, Washington." T. A. Noble.
(With Discussion.) 1.

"Accuracy and Durability of Water—" John W. Hill. (With
Discussion.) 326.

MICHIE, WILLIAM ROBERTS. Memoir of— 647.

MOHUN, EDWARD. Dry Docks, 594.

MONCRIEFF, J. M., Safe Working Stress for Bridges, 534.

MORISON, GEORGE S. The Launhardt Formula and Railroad Bridge
Specifications, 181.

MOULTON, MACE. The Launhardt Formula and Railroad Bridge
Specifications, 199.

MOVABLE SIDEWALKS.

At Paris Exposition of 1900. E. L. Corthell, 315.

NOBLE, THERON A. "Gauging of Cedar River, Washington," 1, 23.

NORTH, EDWARD P. Road Building, 118.

O'HANLY, J. L. POWER. Safe Working Stress for Bridges, 521.

O'ROURKE, J. F. Wooden Stave Pipe, 62.

OWEN, JAMES. Road Building, 85, 139.

PACKARD, R. G. Dry Docks, 581.

PARIS EXPOSITION.

"The Approaches and Transportation Facilities of the— of 1900."
E. L. Corthell, 298.

PATTEN, HENRY B. Wooden Stave Pipe, 65.

PAVEMENTS. (*See Road Building.*)

PIPE.

"Stave Pipe—Its Economic Design and the Economy of Its Use." Arthur L. Adams. (With Discussion.) 27.

Comparison of Wooden Stave, Riveted Steel and Cast-Iron Pipe, as to Cost, Life and Capacity. Arthur L. Adams, 51.

PRICHARD, HENRY S. Safe Working Stress for Bridges, 503.

RAFTER, GEORGE W.

Gauging Cedar River, Washington, 19.

Rainfall, 19.

Flow of Water, 19.

Water Meters, 397.

RAILROADS.

"The Approaches and Transportation Facilities of the Paris Exposition of 1900." E. L. Corthell, 298.

Electric—at the Paris Exposition of 1900. E. L. Corthell, 315, 323.

RAILROADS, BRIDGES.

"The Determination of the Safe Working Stress for Railway Bridges of Wrought Iron and Steel." E. Herbert Stone. (With Discussion.) 467.

"The Launhardt Formula and Railroad Bridge Specifications." Henry B. Seaman. (With Discussion.) 140.

RAINFALL.

"Gauging of Cedar River, Washington." Theron A. Noble. (With Discussion.) 1.

RICKETTS, PALMER C. The Launhardt Formula and Railroad Bridge Specifications, 202.

RITCHIE, JAMES. Dry Docks, 590.

RIVERS.

"Gauging of Cedar River, Washington." Theron A. Noble. (With Discussion.) 1.

"ROAD BUILDING." An Informal Discussion. James Owen, 85; W. E. McClintock, 89; Henry I. Budd, 96; N. P. Lewis, 99; Calvin Tomkins, 104; G. A. Roullier, 106; E. W. Harrison, 107; J. J. McLaughlin, 110; G. W. Tillson, 111; Charles H. Graham, 115; Howard J. Cole, 115; Henry B. Seaman, 116; George Hill, 117; S. C. Thompson, 117; Edward P. North, 118; T. McC. Leutzé, 121; Warren B. Travell, 123; F. G. Cudworth, 126; T. H. McCann, 128; M. D. Burke, 130; H. Conrow, 133; L. J. LeConte, 134; W. C. Foster, 135; James Owen, 139.

ROULLIER, G. A., Road Building, 106.

SCHAUB, J. W. The Launhardt Formula and Railroad Bridge Specifications, 188.

SCHNEIDER, C. C. The Launhardt Formula and Railroad Bridge Specifications, 172.

SCHUYLER, JAMES D. Wooden Stave Pipe, 79.

SEAMAN, HENRY B.

Road Building, 116.

"The Launhardt Formula and Railroad Bridge Specifications," 140, 236.

Experiments on Bridges Under Moving Train Loads, 453.

SEWERAGE.

Sewer Pipe of Wooden Staves. James C. Meem, 63.

SKINNER, F. W. Wooden Pipe, 64.

SMITH, FREDERICK HENRY. Memoir of— 643.

SMITH, J. WALDO. Water Meters, 359.

SNOW, J. P. The Launhardt Formula and Railroad Bridge Specifications, 206.

SPECIFICATIONS.

"The Launhardt Formula and Railroad Bridge—" Henry B. Seaman. (With Discussion.) 140.

"STAVE PIPE—Its Economic Design and the Economy of Its Use." Arthur L. Adams, 27.

Discussion: George W. Tillson, 60; Rudolph Hering, 60; J. F. O'Rourke, 62; James C. Meem, 63; F. W. Skinner, 64.

Correspondence: Henry B. Patten, 65; F. W. D. Holbrook, 65; L. J. Le Conte, 66; D. C. Henny, 68; James D. Schuyler, 79; Arthur L. Adams, 80.

STONE, E. HERBERT. "The Determination of the Safe Working Stress for Railway Bridges of Wrought Iron and Steel," 467, 540.

STONE, WATERMAN. Memoir of— 649.

THOMPSON, S. C. Road Building, 117.

TAIT, J. G. Dry Docks, 586.

THOMSON, G. H. Experiments on Bridges under Moving Train Loads, 456.

THOMSON, JOHN. Water Meters, 353.

THOMSON, T. KENNARD.

The Launhardt Formula, and Railroad Bridge Specifications, 198
Experiments on Bridges under Moving Train Loads, 455.

THURSTON, R. H. Safe Working Stress for Bridges, 509.

TILLSON, GEORGE W.

Wooden Stave Pipe, 60.

Road Building, 111.

TOMKINS, CALVIN. Road Building, 104.

TRAVELL, WARREN B. Road Building, 123.

TURNEAURE, F. E.

The Launhardt Formula and Railroad Bridge Specifications, 195.

"Some Experiments on Bridges under Moving Train Loads," 410, 465.

Safe Working Stress for Bridges, 527.

WADDELL, J. A. L.

The Launhardt Formula and Railroad Bridge Specifications, 210.

Safe Working Stress for Bridges, 517.

WATER, FLOW OF—

"Gauging of Cedar River, Washington." Theron A. Noble. (With Discussion.) 1.

"Stave Pipe—Its Economic Design and the Economy of its Use." Arthur L. Adams. (With Discussion.) 27.

WATER METERS. "The Accuracy and Durability of—" John W. Hill. (With Discussion.) 326.

WILLIAMS, BENEZETTE.

Gauging Cedar River, Washington, 21.

Kutter's Formula, 22.

WILLIAMSON, WILLIAM GARNETT. Memoir of— 645.

WILSON, JOSEPH M.

The Launhardt Formula and Railroad Bridge Specifications, 228.

Safe Working Stress for Bridges, 538.

WOOD.

"Stave Pipe—Its Economic Design and the Economy of Its Use."

Arthur L. Adams. (With Discussion.) 27.

WORCESTER, J. R. The Launhardt Formula and Railroad Bridge Specifications, 191.

WRIGHT, CHARLES H. The Launhardt Formula and Railroad Bridge Specifications, 188.